UTILITY APPLICATION

OF

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ON

MULTI-PURPOSE EXERCISE DEVICE

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MULTI-PURPOSE EXERCISE DEVICE

BACKGROUND

More and more people are recognizing the benefits of regular exercise, and the exercise industry has experienced rapid growth as a result. Popularity may have sparked demand for exercise equipment and translated into greater sophistication, increasing the need for new and improved exercise equipment. One popular form of exercise is simulated rowing, which may have prompted the development of various rowing machine exercise devices that are discussed in general terms below.

Rowing machines are a type of exercise equipment intended to duplicate the rowing stroke of a boat in water. With conventional rowing machines, the resistance of the water may be simulated in various ways, for example, hydraulic or pneumatic cylinder assemblies or wind fan assemblies. Typically, the rowing machine has a handle or a pair of rowing arms, which the user pulls towards his body, and a slidable seat, which moves back and forth upon a track as the arms are moved against the force of the resistance mechanism. With these rowing machines, only a single resistance mechanism is applied through the arms.

There may be several drawbacks to these conventional rowing machines. Because the machine's resistance may be applied through the arms, the force of the resistance may travel through the arms and down through the rower's back. As a consequence, the energy, which the user expends, and the length of the workout may be limited by the strength of the rower's arms and back, which are often one of the weakest areas of the body. Accordingly, the user's cardiovascular and strength

workout may be somewhat limited. Alternatively, if the user uses a conventional rowing machine at too high of an exercise level, injury to the back or muscle strain may result.

Many conventional rowing machines may also be relatively large and cumbersome in design. For example, for rowing machines which employ a wind fan assembly, the wind fan is located on one end of the rowing machine track, thereby resulting in a relatively long exercise device which requires a great deal of space. Also, past attempts with flywheel-type resistance mechanisms may have resulted in flywheels of extremely heavy weight, thereby making the exercise device difficult to move for storage or other purposes. Conventional rowing machine exercisers may also be problematic because of the high level of noise generated when in use.

Also, the rowing exercise may be less productive because the back stress tends to fatigue a person prematurely, prior to achieving worthwhile aerobic exercise. Additionally, the rowing exercise would likely burn more calories if a significant portion of the workout were imposed on the leg and hip muscles, which are larger and can do more work than the arm muscles. Thus, it may desirable to provide a rowing machine exercise apparatus that provides direct resistance to rearward movement of the seat in order to more significantly involve the muscles of the legs and hips.

Another common problem with rowing machines may be that the seat and the foot platform are at the same relative elevation above the ground. As a result, a person using a flat-type rowing machine typically may have to crouch forward into a cramped position in order to reach the handle, and often also tends to lean backward during the

drive motion. Such deviations from a proper posture may place unnecessary stress on the person's back, creating a greater risk of injury (such as hyperextension of the lower back) and reducing the effectiveness of the exercise. The premature fatigue problems may be exacerbated with this type of machine because the exercise focuses away from the upper legs and hips. Thus, it may be desirable to provide a rowing machine exercise apparatus that makes it unnecessary and undesirable to assume a less than ideal posture during rowing exercise.

The potential for injury may increase as a person leans further backward during the drive portion of each rowing stroke. As a person approaches a supine position parallel to the ground, the person's spine may assume an orientation perpendicular to the direction of gravitational force so that a maximum stress may be placed on the person's back in order to return to an upright position. Thus, it may be desirable to provide a rowing machine that eliminates the possibility of the person assuming a supine position parallel to the ground during the exercise.

Most flat-type rowing machines may be relatively difficult to mount and dismount due to their proximity to the ground. In many instances, the seat may be only inches from the floor surface supporting the rowing machine. In order to minimize the potential for back injury, it may be desirable to provide a rowing machine exercise apparatus that has a seat positioned at a more suitable level above the ground or support surface to facilitate mounting and dismounting.

Many rowing machines may also suffer from relatively complicated and expensive construction that renders such machines an unaffordable luxury for the

average consumer. An additional problem with many such machines may be that they are not designed to be portable. Thus it may be desirable to provide a rower that is relatively simple and lightweight in construction and easily stored.

Inadequacies may also exist with respect to many of the various resistance systems incorporated into rowing machines. For example, the resistance can often be disjointed, difficult to equate for each arm, and/or susceptible to slippage. Also, many of the rowing machines are severely limited in terms of resistance adjustability. Furthermore, some exercise machines may only offer resistance in one direction. A better working of the muscle groups may occur with resistance in more than one direction during the exercise.

Furthermore, it may be advantageous to have a highly adjustable exercise system that may allow a user to selectively exercise either or both upper body and lower body. This may allow users of different heights, sizes and abilities to utilize the same system.

Exemplary embodiments provided herein may address these and many other problems associated with currently available multi-purpose exercise devices.

SUMMARY

Provided are exemplary embodiments of a multi-purpose exercise system, including an inclined frame, an adjustable handlebar pivotally coupled to the inclined frame, a seat slidably coupled to the inclined frame, a first resilient member configured to couple to the handlebar and to the inclined frame, and a second resilient member configured to couple to the seat and to the inclined frame, where the angle of the

adjustable handlebar with respect to the inclined frame is selectably adjustable, and where the exercise device allows exercise of the upper body or the lower body independently.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a multi-purpose exercise device according to an exemplary embodiment.

Figure 2 is a more detailed perspective view of a multi-purpose exercise device according to an exemplary embodiment.

Figure 3 is a perspective view of a multi-purpose exercise device according to an exemplary embodiment.

Figure 4 is a side elevation view of a multi-purpose exercise device according to an exemplary embodiment.

DETAILED DESCRIPTION

The detailed description set forth below in connection with the appended drawings is intended as a description of exemplary embodiments and is not intended to represent the only forms in which the embodiments may be constructed and/or utilized. The description also sets forth the functions and the sequence of steps for constructing and operating the invention in connection with the illustrated embodiments. However, it is to be understood that the same or equivalent functions and sequences may be accomplished by different embodiments that are also intended to be encompassed within the spirit and scope of the invention.

A multi-purpose exercise system according to an exemplary embodiment is shown in Figure 1 generally at **10**. System **10** may include a first base member **12** and a second base member **14**, both may be configured to contact a support surface and may support the entire system. System **10** may also include a crosspiece **16** that extends between the first base member **12** and the second base member **14** such that crosspiece **16** may be in an inclined configuration with respect to the support surface. Crosspiece **16** may couple to first base member **12** via a weld, however other coupling configurations may be utilized, as desired. Crosspiece **16** may be adjustably coupled to second base member **14** such that the amount of incline of crosspiece member **16** with respect to the support surface may be varied, as desired.

System **10** may also include a handlebar **18** that may be pivotally coupled to crosspiece **16**. System **10** also may include a seat **20** that may be slidably coupled to crosspiece **16**, such that it may be able to move along the crosspiece **16**. System **10** may also include a footpad **22** that may be selectively adjustably couplable to crosspiece **16**. Footpad **22** may also have a height adjustment to allow different positions such that users of different sizes or abilities may utilize the system, as desired. Handlebar **18** may also be adjustable such that there may be different positions that allow the handlebar to adjust to be closer to footpad **22** such that users of different sizes and abilities may utilize the system as desired. Seat **20** may be configured to easily slide along crosspiece **16** between certain points such that it will not travel off of crosspiece **16** towards the base member or bump or contact the handlebar **18**.

System **10** may include a first resilient member **24** that may couple handlebar **18**

to the first base member **12**. It will be appreciated that although first resilient member **24** is shown as being coupled to first base member **12**, it may be coupled to crosspiece **16** or to other portions of the system, as desired. System **10** may also include a second resilient member **26** that may be couplable to the seat **20** and to the second base member **14**. It will be appreciated that although second resilient member **26** is shown as coupled to second base member **14**, it may be coupled to another part of the frame of the system, including to the crosspiece **16**, or other portion, as desired. First and second resilient members may provide resistance for the movement of the seat and handlebar of the system to allow a user to perform a resistance workout.

System **10** may also include a grasping member **30** that may be configured to couple to a resilient member, and the resilient member configured to couple to the frame via a coupling device **32**, which may be located at various parts of the system. In this manner, a user may utilize the grasping members to exercise various other parts and areas of the body including, but not limited to, the biceps, triceps and other body parts or systems, as desired.

Grasping member **30** may be configured to couple to first resilient member **24** or second resilient member **26** such that resilient members may be used throughout the system, as needed. Alternatively, grasping member **30** may employ its own resilient member to couple to various portions of the system, as desired.

System **10** may also include a height adjustment member **34** that is configured to couple to crosspiece **16** and to first base member **12** such that the incline of crosspiece **16** and/or height of crosspiece **16** may be adjustable, as desired. With this

configuration, the incline of crosspiece **16** may be adjustable to allow for more resistance to be required to move seat **20** along crosspiece **16**. Further, with this configuration, the system may be utilized by users of different heights, sizes, abilities, needs, and the like.

Footpad **22** may be selectively adjustably couplable to crosspiece **16** such that it may be moved to a position closer to handlebar **18** and to seat **20**. With this configuration, persons of different sizes, shapes, abilities, etc. may utilize the system. Furthermore, handlebar **18** may also be adjustable such that it may extend further away from the seat **20** and crosspiece **16** such that users of different sizes, shapes, abilities, etc. may utilize the system.

System **10** may include more than one grasping member **30**, as desired. Furthermore, the system may include more than one resilient member such that different configurations may be configured by the user to add more resistance to different parts of the system. With this highly adjustable and configurable system, a user may exercise the lower body utilizing the seat and footpad only, by moving the seat up crosspiece **16**.

A user may also utilize only the handlebar to exercise the user's upper body, or only the seat to exercise the lower body. Furthermore, the user may also utilize both at the same time to exercise the upper body, lower body, and get an aerobic workout at the same time. It will be appreciated that many different configurations and setups of the portions of the system may be utilized such that a consumer may more readily purchase this system as it may be configured for many different users and abilities, and

strength and conditioning workouts. The portions of the system are typically made out of steel, aluminum, hard plastic, and other materials. However, it will be appreciated that the portions of the system may be made out of other materials, as desired.

Resilient members **24** and **26** are typically made out of elastomeric tubing, solid rubber, bungee-type cord, or other resilient member, as desired. Resilient members **24** and **26** may also include an end piece **40** that is configured to couple to various portions of the system, as desired. Grasping members **30** may be made out of metal, hard plastic, foam, rubber, strap, or other material, as desired.

Footpad **22** may be lifted from the system and repositioned with respect to crosspiece **16**, as desired. Furthermore, footpad **22** may include an adjustment positioner to allow the footpad to extend away from crosspiece **16**, as desired.

Figure 2 shows a perspective view of system **10** showing footpad **22** in a different position, highlighting the adjustability of the height of the footpad. As can be seen, there may be many different height adjustments for footpad **22** with respect to crosspiece **16**, as well as different positions of footpad **22** with respect to crosspiece **16**, as desired.

Also shown in Figure 2, handlebar **18** may include a portion that will extend away from the system as shown such that the handlebar and system may be selectively configurable for the different types of users and workouts, as needed. Furthermore, as shown, footpad **22** may be coupled to crosspiece **16** in many different positions to change the configuration of the system for different sizes, types, and needs of the particular user.

Resilient member **24** may be selectively positioned throughout the system to add resistance to a particular portion of the system to further make the system more adjustable for different users and workouts, as desired.

Again, resilient members **24** and **26** may include an end piece **40** that may couple to the system at various points to make the system highly adjustable.

System **10** may optionally include an exercise computer **36**, which may be coupled at various positions throughout the system, as desired, which may assist the user to enhance the workout.

Figure 3 is a perspective view of the system showing the seat **20** and handlebar **18** in a fully extended position, and showing footpad **22** in one of its many different positions.

As can be seen, first resilient member **24** and second resilient member **26** may provide resistance for the system, first resilient member being configured to resist the movement of seat **20** along crosspiece **16**, and second resilient member **26** being configured to resist the movement of handlebar **18** from a resting position to a fully extended position.

System **10** may also be configured such that first resilient member **24** couples to grasping member **30** and to first base member **12** via a coupler **42**. In this manner, resilient members may be utilized throughout the system and may be interchangeable to provide resistance for the handlebar **18**, seat **20**, and/or grasping member **30**. Couplers **42** may be located throughout the system such that many different exercises may be accomplished by the user, as desired.

Figure 4 shows an exemplary embodiment of system **10** with handlebar **18** in an adjustable position to increase the range of travel of the handlebar **18** when utilized by a user. In this manner, users with different sizes, shapes, and abilities may utilize the system. Furthermore, the system may be highly configurable to adjust to different strengths of users, as well as a user's desire for different types of workouts and to workout different muscle groups and ranges of muscles groups, as desired.

Furthermore, footpad **22** is shown in different positions with respect to the system and crosspiece **16**, to accommodate different users and different types of workouts. Handlebar **18** is also shown in a different position to facilitate different workouts and different sizes and shapes and needs of particular users, as desired. This system may be highly configurable to adjust to the needs of the user depending on the user's height, shape, workout level, etc. This highly adjustable configuration may make it desirable for a user to buy for their family or for use by multiple different users.

The system may disassemble such that it may be packaged, shipped, and displayed in a much smaller package than when assembled. This may make it more likely for customers and retailers to purchase or carry the equipment. Furthermore, it may be easily disassembled for storage when a user is not using it, such that it would not take up as much space as when assembled. This may make it more likely that a consumer would purchase this system, and it may be used in a relatively small space.

In closing, it is to be understood that the exemplary embodiments described herein are illustrative of the principles of the present invention. Other modifications that may be employed are within the scope of the invention. Thus, by way of example, but not of limitation, alternative configurations may be utilized in accordance with the teachings herein. Accordingly, the drawings and description are illustrative and not meant to be a limitation thereof.